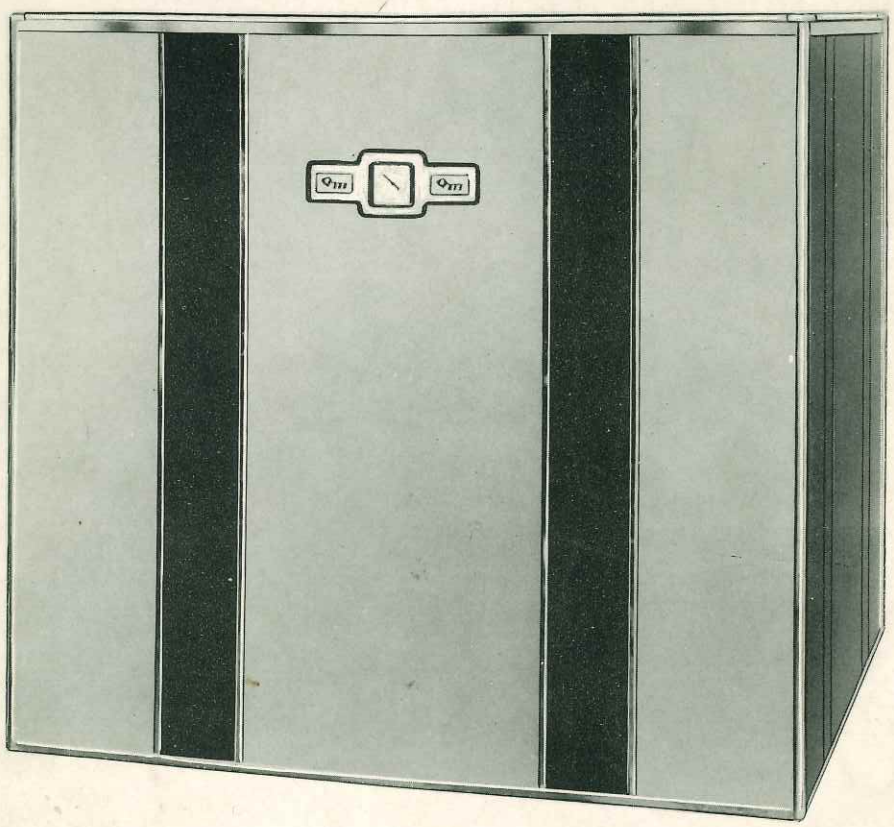
Class D23
Heating Equipment
Box III

QUIET MAY

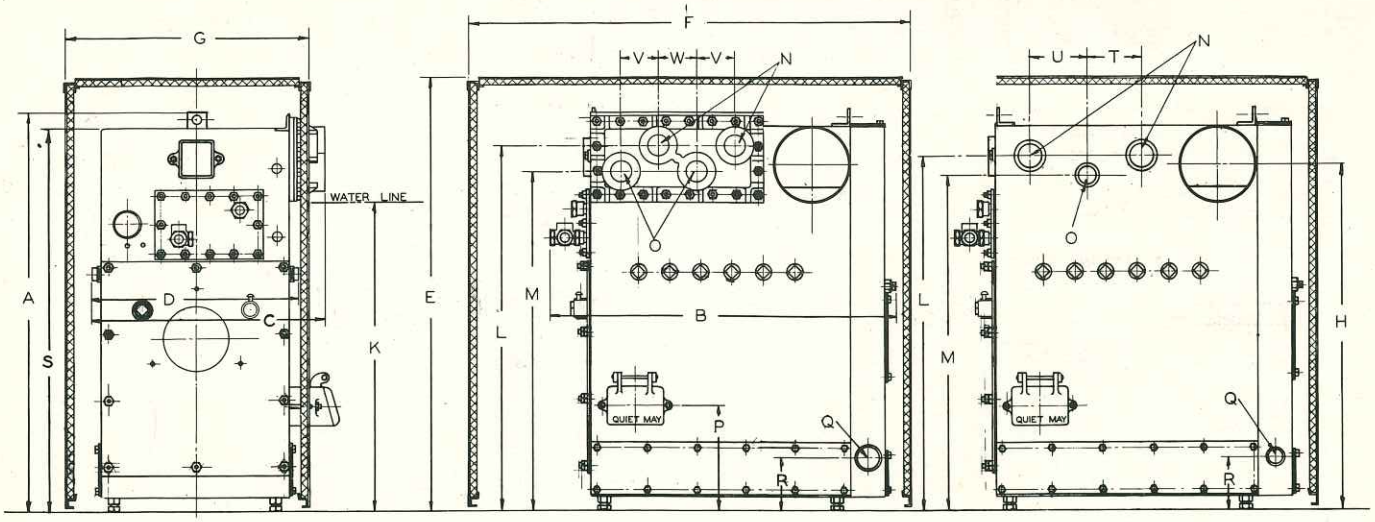


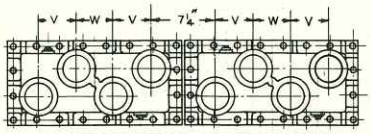
OIL FURNACE

ENGINEERING DATA AND INSTALLATION INSTRUCTIONS

JUNE 15, 1936

SPECIFICATION SHEET
S.M.T. 4-1





CONNECTION PLATES FOR W-2880 BOILER

			S.M.T. 4-1 UNIT NUMBERS			
			S-600 W-960	S-900 W-1440	S-1200 W-1920	S-1800 W-2880
A	OVERALL HEIGHT OF BOILER		46 1/4"	49 1/2"	49 1/2"	54"
B	LENGTH OF BOILER		39"	45 1/2"	51"	64"
C	WIDTH OF BOILER	STEAM	23 3/4"	26 1/2"	28 3/4"	32"
		WATER	27"	29 3/4"	32"	33 1/2"
D	WIDTH OF BOILER ON WATER JOBS (WITH TRANSFER HEATER REMOVED)		23 1/4"	26"	28"	31"
E	HEIGHT OF CABINET		53"	53"	53"	61"
F	LENGTH OF CABINET		57"	63"	69"	81"
G	WIDTH OF CABINET		27"	33"	33"	39"
H	HEIGHT OF FLUE CONNECTION		30 9/16"	42 5/16"	42 5/16"	45 3/4"
J	DIA. OF FLUE CONNECTION		9"	10"	10"	12"
K	HEIGHT OF WATER LINE		35 1/2"	38"	38"	41 1/2"
L	HEIGHT TO ℄ OF SYSTEM OUTLETS	STEAM	40 3/4"	44"	43 3/4"	49
		WATER	42"	45 1/4"	45 1/4"	49 13/16"
M	HEIGHT TO ℄ OF SYSTEM RETURNS	STEAM	38 1/2"	41 1/2"	42 9/16"	43 1/8"
		WATER	39"	42 1/4"	42 1/4"	46 13/16"
N	NUMBER & SIZE OF SYSTEM OUTLETS	STEAM	2-2 1/2"	2-2 1/2"	2-3"	2-4"
		WATER	2-2 1/2"	2-3"	2-4"	4-3"
O	NUMBER & SIZE OF SYSTEM RETURNS	STEAM	1-2"	1-2"	1-2"	1-3"
		WATER	2-2 1/2"	2-3"	2-4"	4-3"
P	HEIGHT OF EXPANSION DOOR		12"	8 3/4"	11"	11"
Q	SIZE OF BOILER RETURNS	STEAM	1-1 1/2"	1-1 1/2"	1-1 1/2"	1-2 1/2"
		WATER	1-2 1/2"	1-2 1/2"	1-3"	1-4"
R	HEIGHT TO ℄ OF BOILER RETURN	STEAM	5 1/2"	5 1/2"	5 1/2"	6 3/8"
		WATER	6"	6"	6 1/2"	6 3/8"
S	LEVELED HEIGHT OF BOILER		44 1/4"	47 1/2"	47 1/2"	52
T	℄ TO ℄ OF SYSTEM CONNECTIONS	STEAM	6 1/4"	6 7/8"	6 7/8"	13 1/4"
U	℄ TO ℄ OF SYSTEM CONNECTIONS	STEAM	6 1/2"	6 3/8"	6 15/16"	6 3/4"
V	℄ TO ℄ OF SYSTEM CONNECTIONS	WATER	4 3/8"	4 3/8"	4 7/16"	4 3/8"
W	℄ TO ℄ OF SYSTEM CONNECTIONS	WATER	4 1/2"	4 1/2"	4 3/8"	4 1/2"
X	RECOMMENDED HEIGHT OF CHIMNEY		35'-0"	35'-0"	35'-0"	35'-0"
Y	RECOMMENDED AREA OF CHIMNEY		8"x8"	8"x12"	12"x12"	16"x16"
Z	SHIPPING WEIGHT OF BOILER IN LBS. APPROX.	STEAM	1071	1395	1622	2350
		WATER	1185	1538	1692	2450
AA	SHIPPING WEIGHT OF CABINET IN LBS.		275	327	375	425
BB	SHIPPING WEIGHT OF BURNER IN LBS.		275	275	275	300
CC	SHIPPING WEIGHT OF INSULATION IN LBS		35	50	50	85
DD	GALLONS OF WATER IN BOILER		29.4	46.82	54.99	69.27
EE	GALLONS OF WATER IN THER-MAY-LATOR		1.71	2.58	3.21	4.35
FF	DOMESTIC WATER IN GALLONS PER HOUR - 90° F RISE		180	270	360	540
GG	SQ. FT. ALLOWANCE FOR DOMESTIC WATER LOAD IF TANK HEATER IS USED MAX. COIL RATING 2 HOUR RUN 90° F. RISE (S-600 W-960: 60 GALS; S-900 W-1440: 90 GALS.; S-1200 W-1920: 120 GALS.; S-1800 W-2880)		S-100 W-165	S-150 W-250	S-200 W-330	S-300 W-500
HH	B.T.U. OUTPUT		144,000	216,000	288,000	432,000
JJ	MAXIMUM OIL RATE - GALLON PER HOUR		1.3	1.9	2.6	3.8
KK	STANDARD ATOMIZER		W1.5	W1.9	2.3	3.2

SHIPPING LIST

Quiet MAY Oil Furnace Type SMT-4-1 No._____

No. 1 Boiler Type_____ No._____

1	Tankless Domestic Water Heater Type_____
1	Hot Water Radiation Transfer Heater Type_____(Hot Water Boilers only)

No. 2 Wooden Crate -- containing

1	Burner No._____One Pipe or Two Pipe Hook-up
1	Control Panel Type_____
1	Tankless Heater Control Type_____With Bushing Attached
1	Steam Pressure Control Type_____
1	Thermostat Type_____
1	Ther-Alti-meter for Hot Water Boilers only
1	Low Water Cut-off for Steam Boilers only Type_____
1	Water Column Assembly
1	Expansion Door -- Studs and Nuts Attached
1	Splice Box Assembly Type_____
1	Insulation Plate Top Half Type_____Holding Screws in Place
1	Insulation Plate Bottom Half Type_____
1	1/4" x 8" Galvanized Nipple for Pressure Control
1	1/4" Galvanized Ell for Pressure Control
1	5/16" O.D. Copper Tube Assembly for Pressure Gauge Connection
1	Flue Brush
1	25 W Electric Bulb
1	Installation Sign and Frame
1	Cabinet Name-plate_____with screws in envelope
1	Instruction Card
1	Atomizer No._____in bag attached to burner
2	1/4" x 1/2" Machine Screws for Transformer Bracket -- Shipped Wired to Burner

Domestic Water Piping

	3/4" Brass S-600 - W-960		3/4" Brass S-900 - W-1440		3/4" Brass S-1200 - W-1920		1 1/4" Brass S-1800 - W-2880
4	Ells 90°	4	Ells 90°	3	Ells 90°	3	Ells 90°
1	Tee	1	Tee	1	Ell 45°	1	Service Ell
1	14 9/16" Nipple	1	12 7/8" Nipple	1	Tee	1	Tee
1	17 3/16" Nipple	1	16 1/8" Nipple	1	12 13/16" Nipple	1	19 1/4" Nipple
1	4 1/2" Nipple	1	4 1/4" Nipple	1	13 5/8" Nipple	1	15 1/4" Nipple
1	4 7/8" Nipple	1	4 5/8" Nipple	1	6 7/8" Nipple	2	3 5/8" Nipples
1	7" Nipple	1	7" Nipple	1	4 1/2" Nipple	1	3/4" x 10" Capped Nipple
1	10" Capped Nipple	1	10" Capped Nipple	1	2" Nipple		
				1	10" Capped Nipple		

Safety Valve Pipe and Fittings

	1" Galvanized S-600 - W-960		1" Galvanized S-900 - W-1440		1 1/4" Galvanized S-1200 - W-1920		1 1/2" Galvanized S-1800 - W-2880
1	1" Safety Valve	1	1" Safety Valve	1	1 1/4" Safety Valve	1	1 1/2" Safety Valve
2	Ells 90°	2	Ells 90°	2	Ells 90°	2	Ells 90°
1	8" Nipple	1	8" Nipple	1	10 1/4" Nipple	1	Ell 45°
1	2" Nipple	1	2" Nipple	1	2 1/2" Nipple	1	4" Nipple
						1	6" Nipple
						1	2 1/2" Nipple

Air Relief Valves and Fittings -- Hot Water Boilers only

	W-960		W-1440		W-1920		W-2880
1	Air Relief Valve	1	Air Relief Valve	2	Air Relief Valves	2	Air Relief Valves
1	Assembly_____	1	Assembly_____	2	Assemblies_____	1	Right Assembly_____
1	1" to 1/8" Reducer	1	1" to 1/8" Reducer	2	1" to 1/8" Reducers	1	Left Assembly_____
				2	1" x 15 1/8" Nipples	2	1" to 1/8" Reducers

Insulation Wool in Roll Form

S-600 - W-960	S-900 - W-1440	S-1200 - W-1920	S-1800 - W-2880
6 ft.	6 ft.	7 ft.	12 ft.

Boiler Cleaning Compound

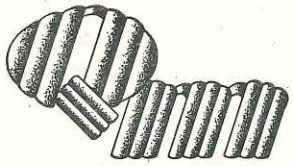
S-600	W-960	S-900	W-1440	S-1200	W-1920	S-1800	W-2880
6 lbs.	10 lbs.	6 lbs.	10 lbs.	10 lbs.	16 lbs.	10 lbs.	16 lbs.

No. 3 Cartons Containing Insulating Cement

S-600 - W-960	S-900 - W-1440	S-1200 - W-1920	S-1800 - W-2880
35 lbs.	50 lbs.	50 lbs.	85 lbs.

No. 4 Wooden Crate -- Containing

Type_____Cabinet with Pressure Gauge and Gloves



INSTALLATION AND OPERATION INSTRUCTIONS

for

QUIET MAY SMT-4-1 OIL FURNACE

These instructions, and the drawings following them, must be used together when setting up the SMT-4-1 Oil Furnace. At the beginning of each section reference is made to the Figure of the drawings which relate to it. STUDY THE DRAWINGS CAREFULLY BEFORE STARTING THE INSTALLATION.

SETTING OF BOILER

Refer to Fig. 1

1 - A level concrete sub-base an inch or two thick and extending out about two inches all around the cabinet is recommended as a foundation for the unit. This adds to the appearance of the installation and keeps the cabinet clean and dry when the basement floor is washed.

2 - Place the boiler so that the minimum clearances shown are provided for servicing the unit.

3 - Place a level on top of the boiler and adjust the leveling screws until the boiler is level.

4 - Adjust the height of the leveled boiler until the dimension "S" is as shown on the specification sheet.

PREPARATION OF BOILER

Refer to Fig. 1

1 - Remove all thread protectors from the openings in the boiler.

2 - Remove the wooden cover plate from the burner mounting plate. Keep the cap screws that were removed as these will be used for attaching the burner head casting.

3 - Remove the metal guards from the domestic hot water connections and replace nuts.

HOT WATER HEATING SYSTEM PIPING

Refer to Fig. 2

1 - The risers are connected into the two upper openings of the Radiation Transfer Heater.

2 - The returns are connected into the lower openings of the Radiation Transfer Heater.

3 - Do not cross-connect risers and returns.

4 - A drain plug is provided in bottom of the Radiation Transfer Heater.

5 - Install the boiler feed line and drain cock as shown.

6 - Install the Radiation System fill line in the usual manner.

7 - Install the Safety Valve line as shown - see detail No. 1 for W-2880.

8 - Install the Air Relief Valve assembly or assemblies as indicated - see detail No. 1 for W-2880.

9 - Install the Ther-Alti-Meter in one of the risers.

STEAM OR VAPOR HEATING SYSTEM

Refer to Fig. 3

1 - Refer to the table accompanying the drawing for the fittings and the approximate length of nipples necessary to make the Hartford Loop return connection.

2 - Install boiler feed line and drain as shown.

3 - Connect the steam supply risers to the two upper openings in the boiler as indicated.

4 - Install the Safety Valve line as shown - see detail No. 1 for S-1800.

BOILER CLEANING COMPOUND

The boiler cleaning compound is to be used according to the directions to be found in each package of the compound furnished. The cleaning compound is introduced into the boiler through the safety valve line and into the Hot Water Radiation System through the plugged opening in the top of the Radiation Transfer Heater connection plate.

INSULATION PLATE

Refer to Figs. 3 and 4

1 - Remove the two nuts from the studs that hold the Inspection Stamp Frame.

2 - Remove one nut from each of the studs that hold the burner mounting plate.

3 - Place the top half of the insulation plate and fasten it in place using the nuts that were removed from the studs that hold the inspection stamp frame.

4 - Install the lower half of the insulation plate, attach it to the upper half as shown, using the sheet metal screws furnished. Put on the nuts over the burner mounting plate studs and draw them up tight against the plate.

BOILER ACCESSORIES

Refer to Figs. 4 and 5

1 - Install the Water Column Assembly as shown. This assembly is made up and tested at the factory. It is only necessary to break the union, install the lower nipple and half union and swing the column into place as shown on Fig. 4.

2 - If the boiler is to serve steam radiation, install the Low Water Cut-Off, as shown. Look for the "top" marking on the Low Water Cut-Off and see that it is installed correctly.

3 - Install the Splice Box Assembly, fastening the strap in place over the two long studs along the left side of the Tankless Heater Plate. Remove the outer nut from both of these studs and place the bracket against the other nuts that act as spacers on these studs.

4 - Install the Pressure Control as shown.

5 - Insert the Tankless Heater Aquastat element into the lower opening of this heater, as shown.

6 - Install the copper tube for the pressure gauge connection, as shown in Fig. 4.

7 - Install the Expansion Door using the studs and nuts furnished -- this is put on temporarily for testing purposes and must be removed and reinstalled after the cabinet is set up around the boiler.

DOMESTIC WATER PIPING

Refer to Figs. 5 and 6 -- See Fig. 12 for Cleanable Type Tankless Heater

1 - Install the domestic water piping as shown.

2 - Install the drain for the Tankless Heater Coil from the opening as shown.

3 - Install a 3/8" needle valve between the hot and cold water lines, as shown, for tempering the domestic hot water.

4 - If an automatic tempering valve is used connect it as shown in the detail No. 1 of Fig. 6.

INSULATION OF BOILER

Refer to Figs. 5 and 6

1 - The Insulating Cement furnished is to be mixed with water and applied in a manner similar to the way in which ordinary asbestos cement is used.

2 - Apply 1/2" of insulation on the insulation plate on the burner end of the boiler. The recess in the plate around the Tankless Heater opening and the space around other openings in the plate should be filled in with insulating cement. The insulation is to be brought out to the edge of the plate along the sides and top and around the cut-out opening for the burner head. Do not fill inside of the Inspection Stamp Frame.

3 - Apply 1/2" of insulation to the front, rear, top, and observation end of the boiler. Do not cover the plate on which the observation port cover swings. Using the point of a trowel, outline all clean-out plates in the insulation so that they may be readily located.

4 - Note carefully that the air space between the boiler and the insulation plate must be sealed off with insulation as shown in detail drawing No. 2 of Fig. 6. The space between the bottom of the insulation plate and the floor should also be sealed off.

SETTING THE BURNER AND WIRING

Refer to Figs. 7 and 8

1 - Set the burner up to the boiler and attach the burner firing head to the burner mounting plate.

2 - Remove the long bolts used for holding the lower transformer bracket to the boss on the blower housing during shipment of the burner and replace them with the round head screws furnished, in order to remove the rigid contact of the two castings and prevent transmission of vibrations.

3 - Check each leg of the burner base and make sure that each is resting firmly on the floor.

4 - Fill the space around the burner head with insulating cement so that the insulation on the burner end of the boiler presents a finished, smooth appearance.

5 - Arrange the wires as shown in Fig. 7 and make the connections according to the wiring diagram given in Fig. 8.

OIL TANK AND LINES

1 - Locate the oil tank in accordance with standard practice and plan the oil line so that it enters the unit from the rear and passes under the cabinet.

2 - Unless specified, the burner is shipped for the one-pipe hookup.

3 - If the oil tank is below the level of the burner or if it is necessary to take the suction line from the top of the tank the two-pipe hookup must be used.

CHIMNEY CONNECTION

1 - The Flue Pipe Connection between the boiler and chimney should be the full size of the flue connection collar on the boiler. All joints must be tight.

2 - The Flue Pipe Connection should be free from all unnecessary bends. The base of the chimney should be cleaned of any accumulation of ash or soot and if necessary a new chimney thimble should be installed. The Flue Pipe connections should be temporary until after the cabinet has been placed on the boiler.

3 - An automatic draft adjustor is not necessary unless the draft is both excessive and variable.

4 - It is recommended that the smokepipe be covered with 1/2" of insulating cement.

TESTING FOR LEAKS

1 - Fill the boiler to the normal water line as indicated on the water column. If the heating system is of the Hot Water Type it should also be filled and tested for leaks at this time.

2 - Open the valves in the Domestic Hot Water Supply Lines.

3 - Fire the burner and adjust the air until smooth operation with a clean fire is obtained. See the special section of these instructions on the adjustment of the burner.

4 - Raise steam pressure on the boiler and inspect all piping for leaks.

CABINET

Refer to Fig. 9 -- See Detailed Drawings

1 - Lay the bottom rails on the floor so that they surround the unit.

2 - Attach the bottom gussets to the bottom rails at each corner as shown in detail sketch No. 1.

3 - Place the vertical corner strips and fasten them in place using the bottom corner pieces. See detail sketch No. 2.

4 - Attach the top rails to the vertical corner posts using the top corner pieces and top gussets as shown in detail sketch No. 3. Note that flat head screws are used for attaching the gussets and the round head screws for the corner pieces.

5 - Remove the test steam gauge from the copper tube line and connect this line to the steam gauge in the front center cabinet panel as shown in detail sketch No. 4.

6 - Locate the panels in accordance with the drawing in detail sketch No. 5. The top of each side panel is inserted into the groove in the under side of the top rail and is then allowed to drop into the groove in the bottom rail.

7 - Place the top sections of the cabinet as shown in the drawing.

8 - Attach the trim plate around the water column openings as shown in detail No. 1 of Fig. 10.

9 - The cabinet should not be set up around the boiler until the insulation has dried out. If this is not practical, leave the top off of the cabinet until the insulation is dry, so that moisture from the insulation may pass off into the air and not condense on the cabinet surfaces.

FINISHING-OFF INSULATION WOOL

Refer to Fig. 10

Note the manner in which insulating wool is applied to fill in the space between the insulation on the boiler shell and the cabinet around the opening for the flue pipe and heating pipes. This insulation should be placed carefully so as to make a neat appearance.

NAMEPLATE FOR CABINET

The nameplate with the serial number of the unit described on it is attached on the service compartment panel as shown in Fig. 9. Use the two screws furnished in the envelope for attaching the nameplate.

SETTING OF STEAM PRESSURE CONTROL

For steam heating plants the pressure control is set as usual, i.e., to cut on at 2 lbs. and to cut off at 4 lbs.

For hot water heating systems the pressure control is set to cut on at 6 lbs., and to cut off at 12 lbs.

ADJUSTMENT OF BURNER

Refer to Fig. 11

In this type of firing head the total amount of air for combustion is controlled as usual by the setting of the air plate at the blower inlet. In the head itself the air is controlled through the use of two sleeves; the inner sleeve carries the straight flow air in cylindrical form surrounding the atomizer and the outer sleeve controls the air that is passed through the turbulator vanes and causes the more intimate mixing of the air with the oil particles which is necessary for good combustion. The relative proportions of air passing through either of these sleeves is adjustable by means of the two sets of diagonally opposed knurled nuts provided on the outside of the main burner head casting. These sets of nuts are marked "INNER SLEEVE ADJUSTMENT" and "OUTER SLEEVE ADJUSTMENT" and when making adjustments both nuts of a pair must be turned at the same time.

As shipped from the factory the "inner" and "outer" sleeve adjustments are set to suit an approximate condition and on some jobs a change in the setting may be desirable particularly in order to produce a cleaner fire. An Orsat should be used to check the original setting or to check during any change in setting. The

following procedure is recommended for making adjustments on this type of firing head.

1 - NORMAL SETTING

As shipped, the "inner" and "outer" sleeve adjustments are set to suit the firing rate for which the burner is intended. It is only necessary to start the burner and open the air adjustment plate on the blower as usual just enough to result in a good clean fire. The cleanliness of the fire may be best observed through the burner end observation port shown in Fig. 7, and observing the back end or the entrance to the secondary gas passage. If smoke or tongues of flame are seen entering this passage the fire is not clean enough even though it appears clean from the rear observation port and further adjustment of the blower air adjustment plate is necessary as the first move.

2 - TO ELIMINATE SMOKE AND FIRE FROM SECONDARY GAS PASSAGE

If smoke or fire is observed through the observation port and is not eliminated by the blower air adjustment, proceed as follows:

Back out on the "INNER SLEEVE ADJUSTMENT" (the upper right and lower left) nuts slowly and observe the effect upon the smoke or fire in the secondary gas passage. This adjustment should be made very slowly and observations should be made continuously.

Do not back out on the nuts further than is necessary to eliminate the smoke or fire. After the fire has been completely cleaned up take a CO_2 reading and if the CO_2 is below 9% reset the blower air adjustment plate and again observe the conditions in the secondary passage. Readjust the inner sleeve if necessary.

The "OUTER SLEEVE ADJUSTMENT" nuts control the turbulance of the fire. These nuts require field adjustment only in rare cases and it is recommended that ordinarily they be left set as received from the factory.

To remove the atomizer line from this head it is only necessary to break the oil line connection and remove the two round head screws in the atomizer line holding plate. Turn the plate 1/2 turn to the left and the atomizer line may be withdrawn with ease.

OPERATION

The Quiet MAY Oil Furnace is a self-contained combination unit supplying heat to the house radiation system and furnishing domestic hot water. The room thermostat and domestic hot water control are in parallel control of the burner. The pressure control acts only as a limit control to prevent further operation of the burner should the steam pressure in the furnace reach a pre-determined high limit.

1 - Steam Installation

When the room thermostat is satisfied and in the off position the Domestic Hot Water Control operates the burner to maintain the water in the boiler within a definite temperature range. When domestic water is being used, the cold water enters the Tankless Water Heater Coil and is heated as it passes through. If the temperature of the heated water falls below the Domestic Hot Water Control setting it functions to start the burner. With the burner operating, the heat produced by the burning

of the oil is transferred to the boiler water and thence to the domestic hot water supply through the Tankless Heater. This method of heating water affords an ample supply at all times without the use of a storage tank.

When the room thermostat calls for heat, the burner starts and raises the boiler water to steaming temperature. The steam generated is distributed to the room radiators through the steam pipes connecting them to the boiler. It is well to remember that all of the boiler output, or in other words, all of the useful heat units in the oil being burned, may be utilized either for heating domestic water or for heating the house, as conditions require or part of the heat may be utilized for both at the same time.

2 - Vapor and Vapor-Vacuum Installation

The vapor installation is the same as the steam installation except that it is designed to distribute steam at lower pressures, usually below one pound gauge. The operation of the oil furnace is the same as outlined above under "Steam Installations". Most vapor jobs are equipped with vacuum valves to keep air from returning to the system as the steam pressure drops after the burner has stopped.

If the air is kept out of the system the condensing steam produces a vacuum in the system. If this vacuum still exists at the time the burner again starts, a quicker response will be had, in that steaming will occur at a lower water temperature. On most jobs this vacuum condition exists only for a few hours after shut-down so that no inconvenience will be experienced from heating the house during the time the burner runs for domestic hot water only and when no heat is required in the house.

Straight vacuum heating jobs are for the most part confined to very large installations so that we do not expect the unit to be used with any of these systems. On such jobs a vacuum pump is used to maintain a vacuum on the system at all times. If a Quiet MAY Oil Furnace is connected to such a job, send detailed information to the factory for control specifications.

3 - Hot Water Installations

The controls used and domestic hot water functions for the hot water installation are the same as are described above for the "Steam Installation". A steam to hot water heat transfer coil is placed in the steam dome of the boiler and the water of the house radiation system circulates through this coil. When the thermostat calls for heat the burner starts and brings the boiler water up to steaming temperatures and steam is generated. This steam contacts the heat transfer coil and is condensed on its surfaces. In this manner the heat of the steam is transferred to the water in the house radiation system circulating through the transfer coil. An air relief valve is provided so that the air in the steam space of the boiler is expelled as pressure on the boiler increases above atmosphere. As the temperature of the water in the heat transfer coil increases the water circulates through it and through the radiation system.

"CIRCULATOR" ON HOT WATER INSTALLATION

Refer to Fig. 13

On Hot Water Radiation systems where the circulation is found to be poor, a

Circulator may prove to be very beneficial. When installing a Circulator the return lines should be tied together and the Circulator installed as shown. The Surface Aquastat shown closes contact on a rise in temperature -- the purpose of the Aquastat is to prevent simultaneous starting of the burner motor and the Circulator motor and thus prevent blinking of lights in the house. When the thermostat calls for heat the burner starts and after the temperature of the air vent pipe reaches about 120° F. the Aquastat closes its contact and starts the Circulator. The ordinary check or flow control valve used in conjunction with domestic hot water hook-ups is not necessary with the Quiet MAY Oil Furnace. Fig. 13 shows how the Circulator motor is connected to the motor terminals of the Control Panel.

INSTALLATION SIGN

A linen sign and knock-down wooden frame is to be assembled according to the instructions included in the sign package. This sign should be displayed during the time that the burner is being installed.

INSTRUCTION CARD

The instruction card furnished with the burner should be filled out and hung on the wall close to the unit.

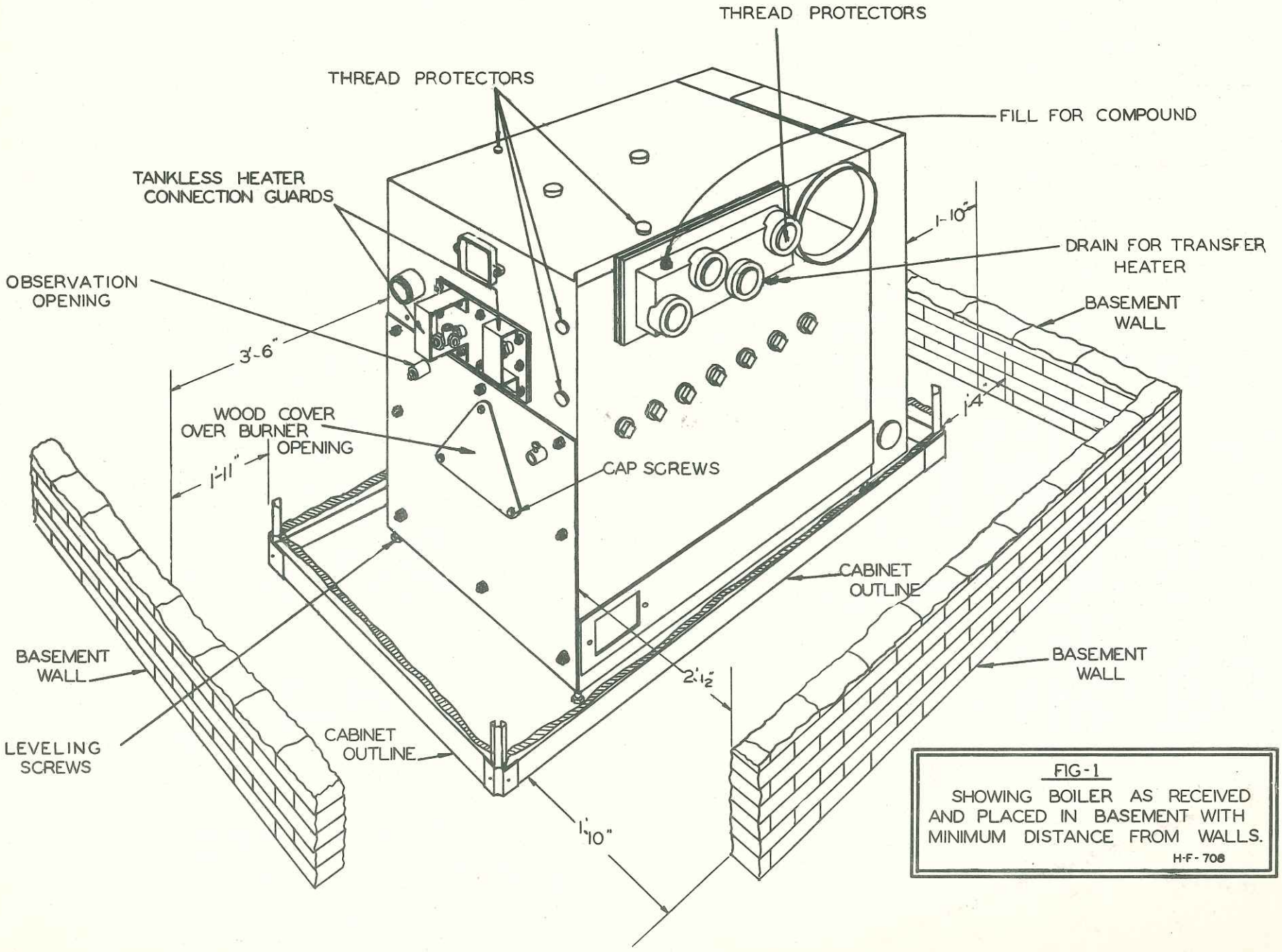


FIG-1

SHOWING BOILER AS RECEIVED AND PLACED IN BASEMENT WITH MINIMUM DISTANCE FROM WALLS.

H-F-708

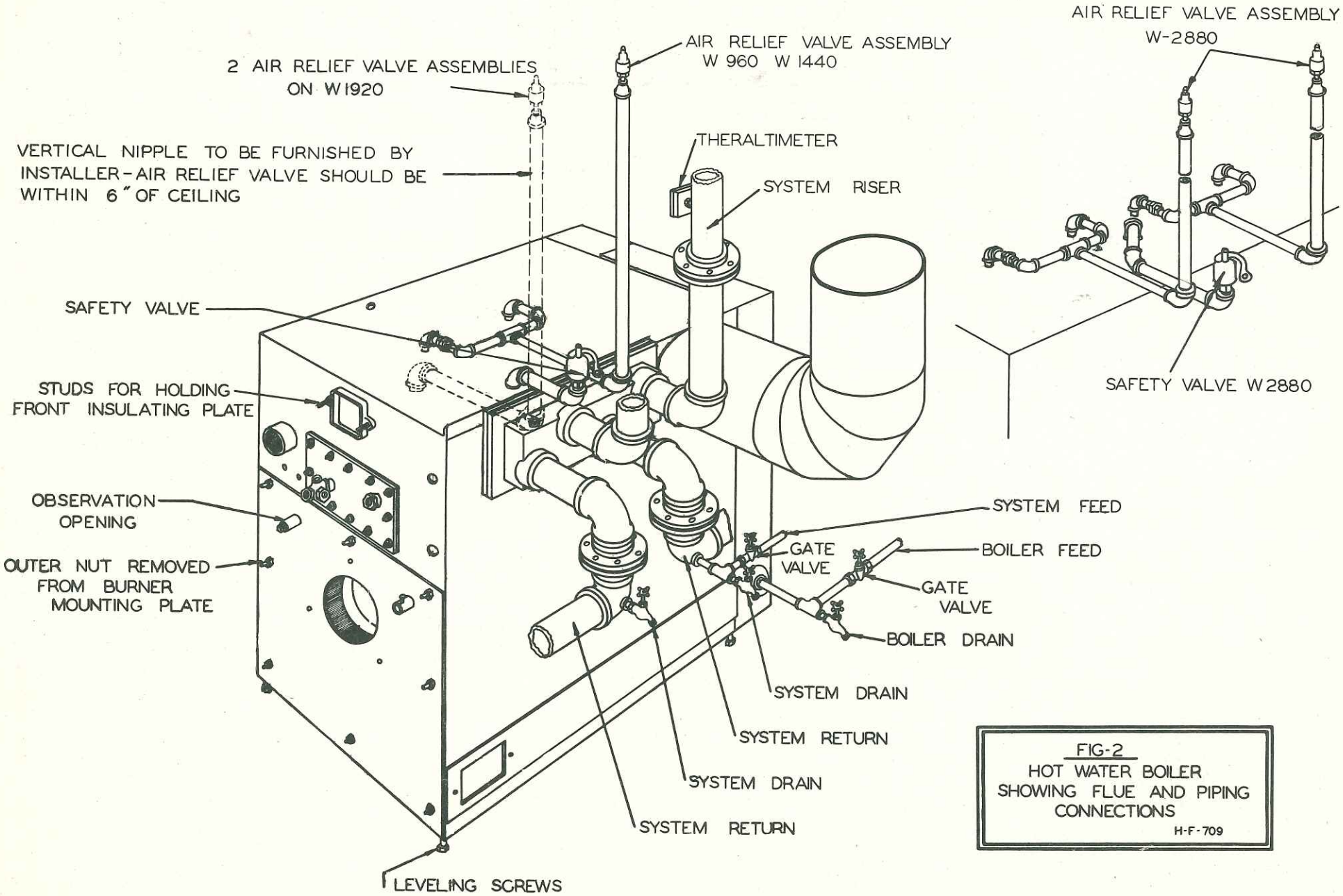
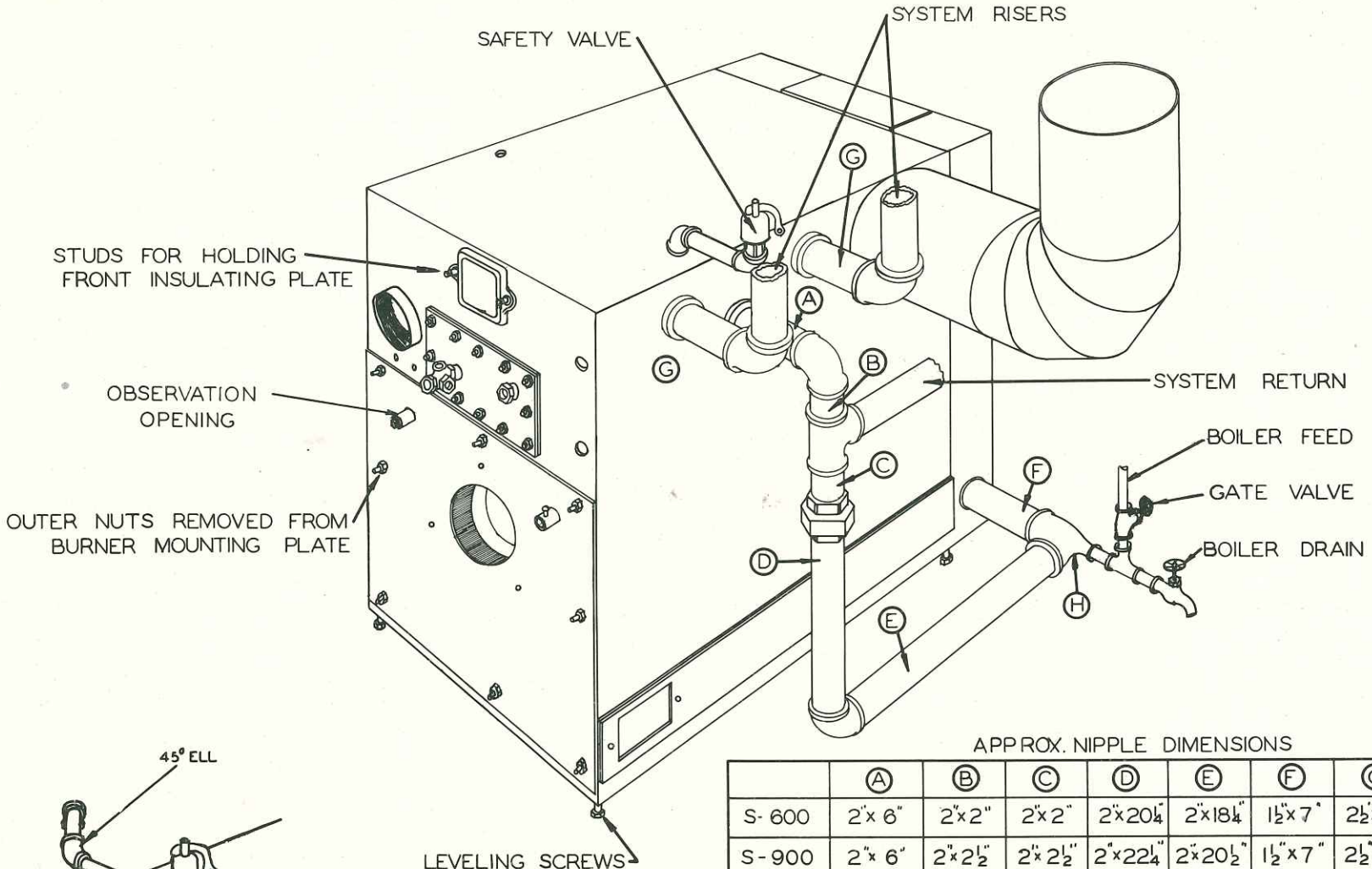
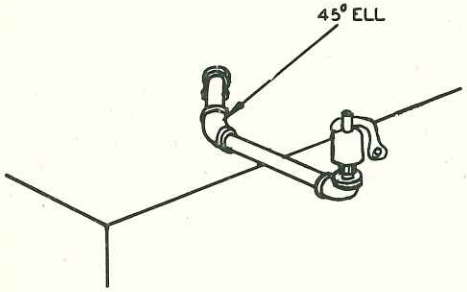


FIG-2
HOT WATER BOILER
SHOWING FLUE AND PIPING
CONNECTIONS
H-F-709



APPROX. NIPPLE DIMENSIONS

	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	Ⓕ	Ⓖ	Ⓗ
S-600	2"x 6"	2"x2"	2"x 2"	2"x20¼"	2"x18¼"	1½"x 7"	2½"x 6"	2"x½"x1½" TEE
S-900	2"x 6"	2"x2½"	2"x 2½"	2"x22¼"	2"x20½"	1½"x 7"	2½"x 6"	"
S-1200	2"x 6"	2"x 3"	2"x2½"	2"x22½"	2"x20½"	1½"x 7"	3"x 6"	"
S-1800	3"x 6"	3"x 2⅝"	3"x2⅝"	3"x23½"	3"x 34⅝"	2½"x 7"	4"x 6"	3"x 1½" x 2½"



SAFETY VALVE PIPING ON S1800

FIG-3
STEAM BOILER
SHOWING FLUE AND PIPING CONNECTION.
H-F-711

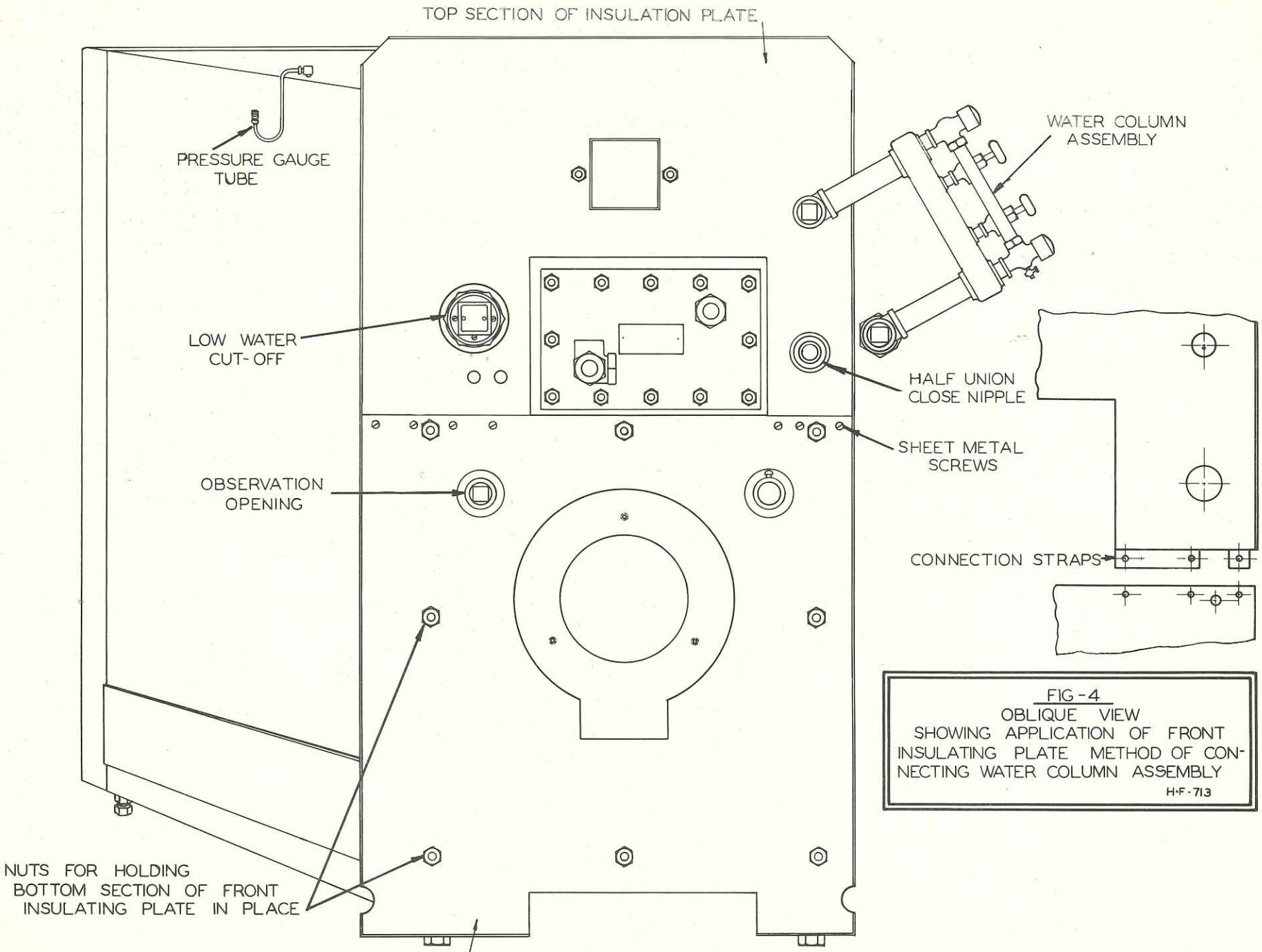

TOP SECTION OF INSULATION PLATE
PRESSURE GAUGE TUBE
WATER COLUMN ASSEMBLY
LOW WATER CUT-OFF
HALF UNION CLOSE NIPPLE
SHEET METAL SCREWS
OBSERVATION OPENING
CONNECTION STRAPS
NUTS FOR HOLDING BOTTOM SECTION OF FRONT INSULATING PLATE IN PLACE
BOTTOM SECTION OF INSULATION PLATE

FIG-4
OBLIQUE VIEW SHOWING APPLICATION OF FRONT INSULATING PLATE METHOD OF CONNECTING WATER COLUMN ASSEMBLY
H-F-713

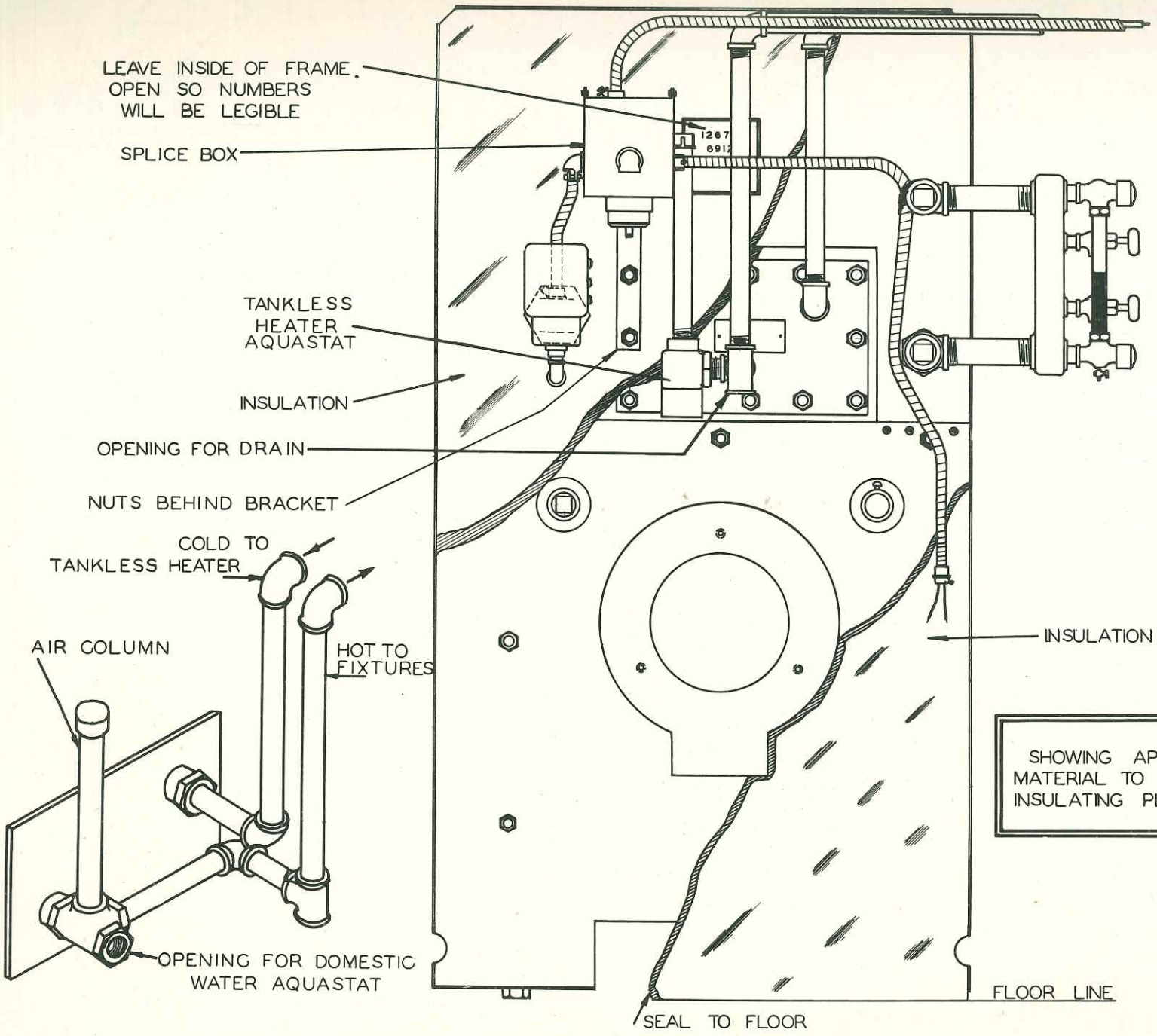
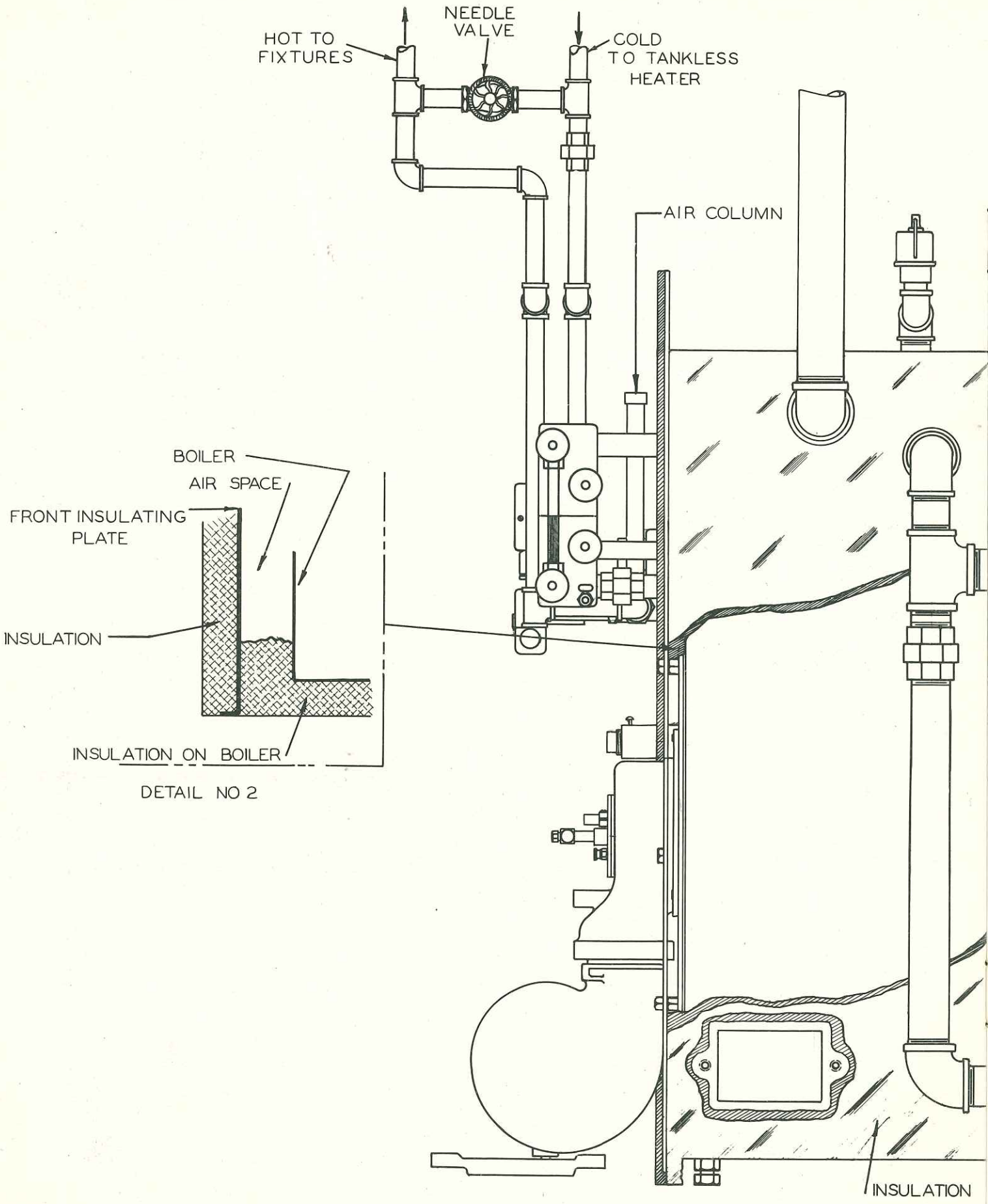


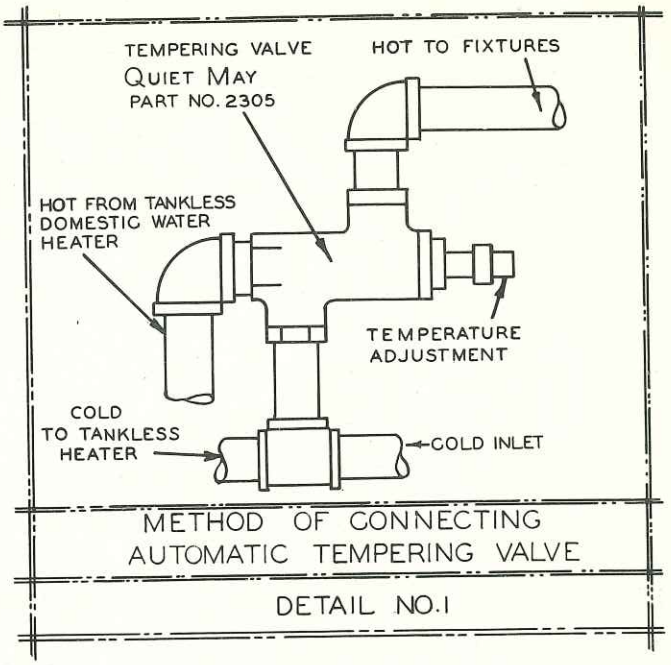
FIG 5

SHOWING APPLICATION OF ½" INSULATION MATERIAL TO OUTER SURFACE OF FRONT INSULATING PLATE

H-F-715


HOT TO FIXTURES
NEEDLE VALVE
COLD TO TANKLESS HEATER
AIR COLUMN
BOILER
AIR SPACE
FRONT INSULATING PLATE
INSULATION
INSULATION ON BOILER
INSULATION

DETAIL NO 2



METHOD OF CONNECTING
AUTOMATIC TEMPERING VALVE

DETAIL NO.1

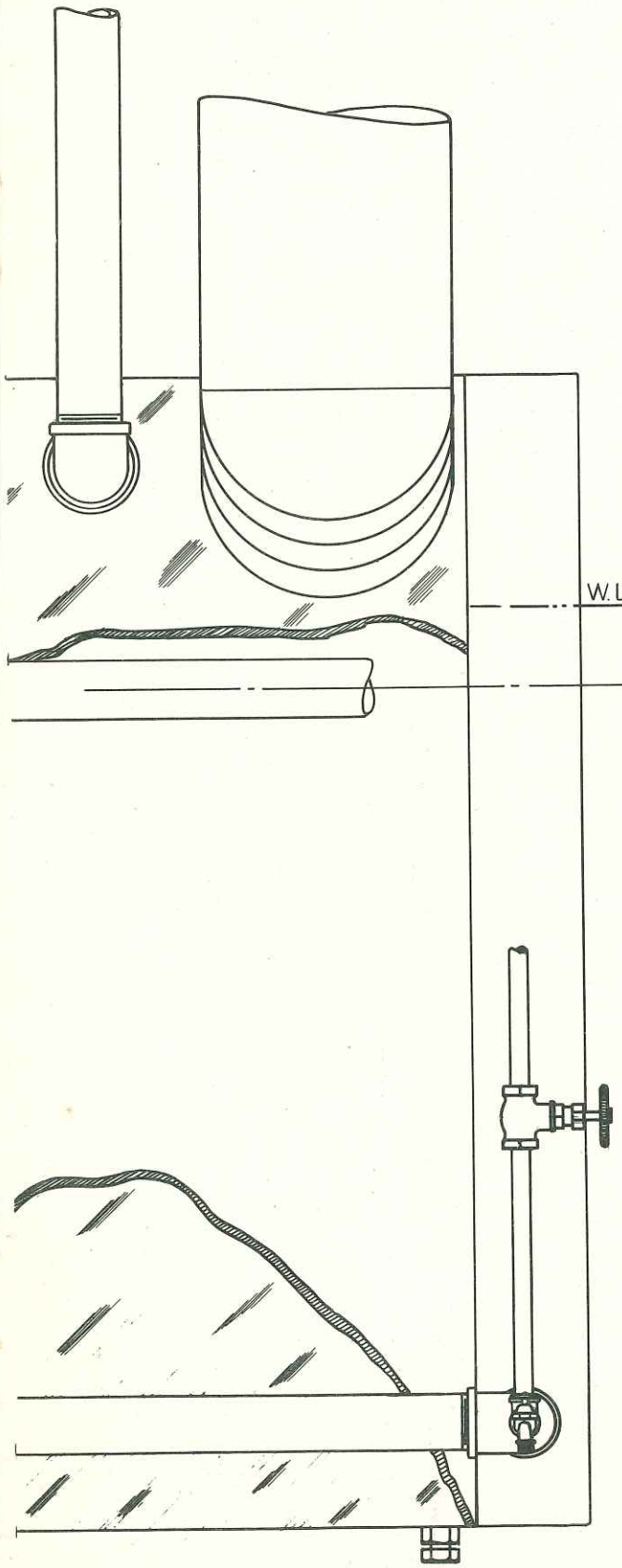


FIG -6

VIEW FACING BACK OF BOILER
SHOWING APPLICATION OF INSULATING CEMENT

F-F-720

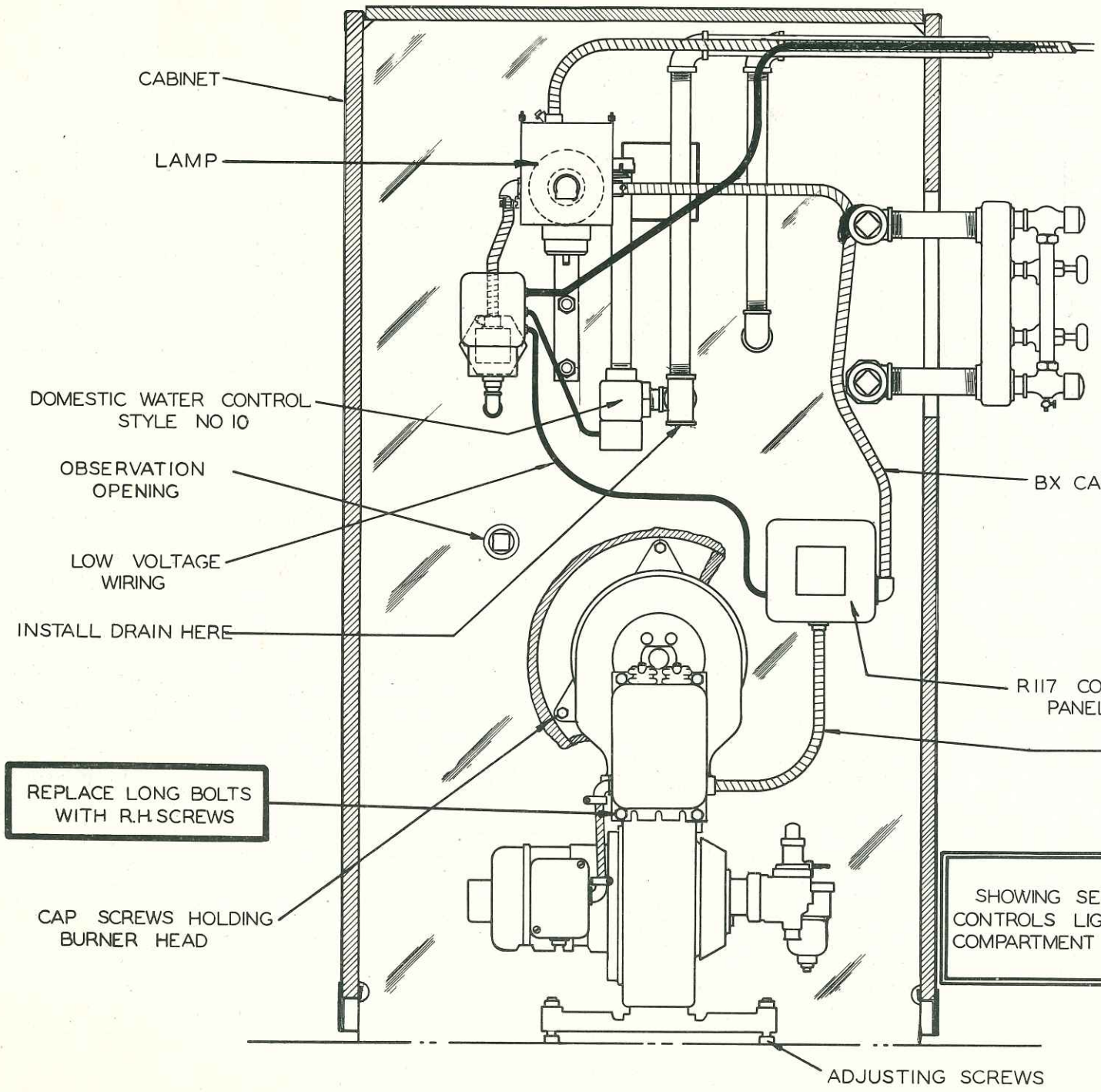
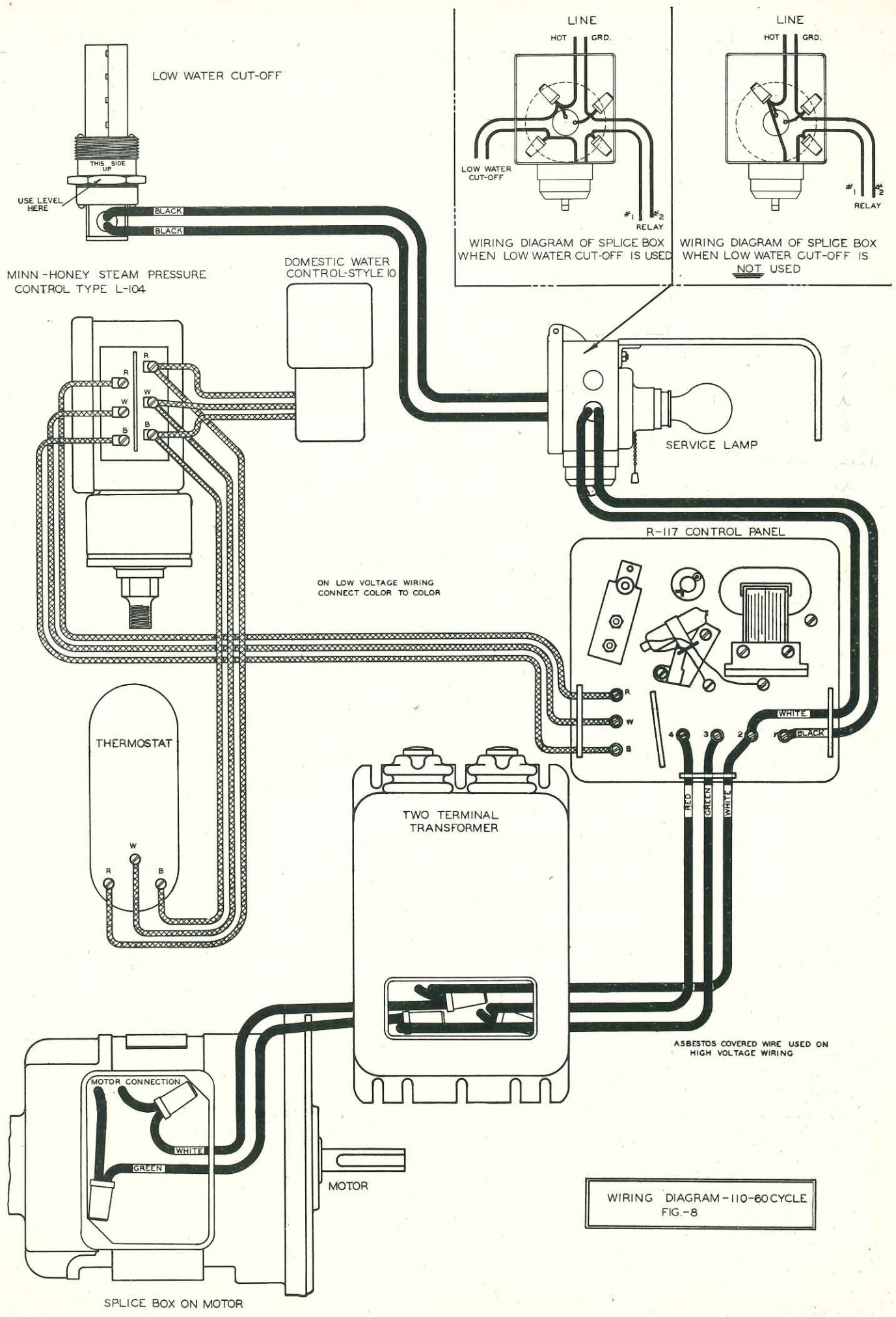


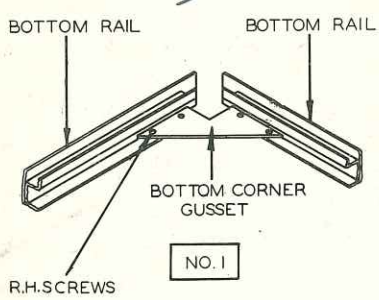
FIG - 7

SHOWING SETTING & WIRING OF BURNER CONTROLS LIGHT AND SEALING OF BURNER COMPARTMENT AT SIDES AND TOP

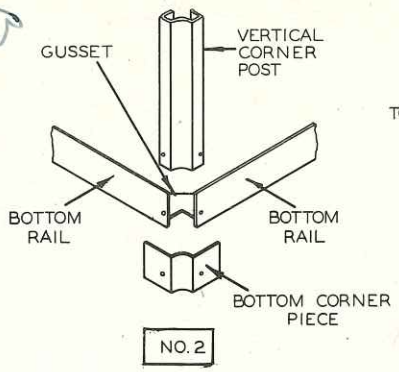
H-F-716



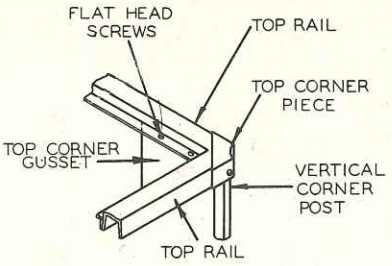
WIRING DIAGRAM-110-60 CYCLE
FIG.-8



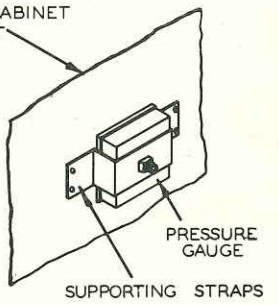
NO. 1



NO. 2

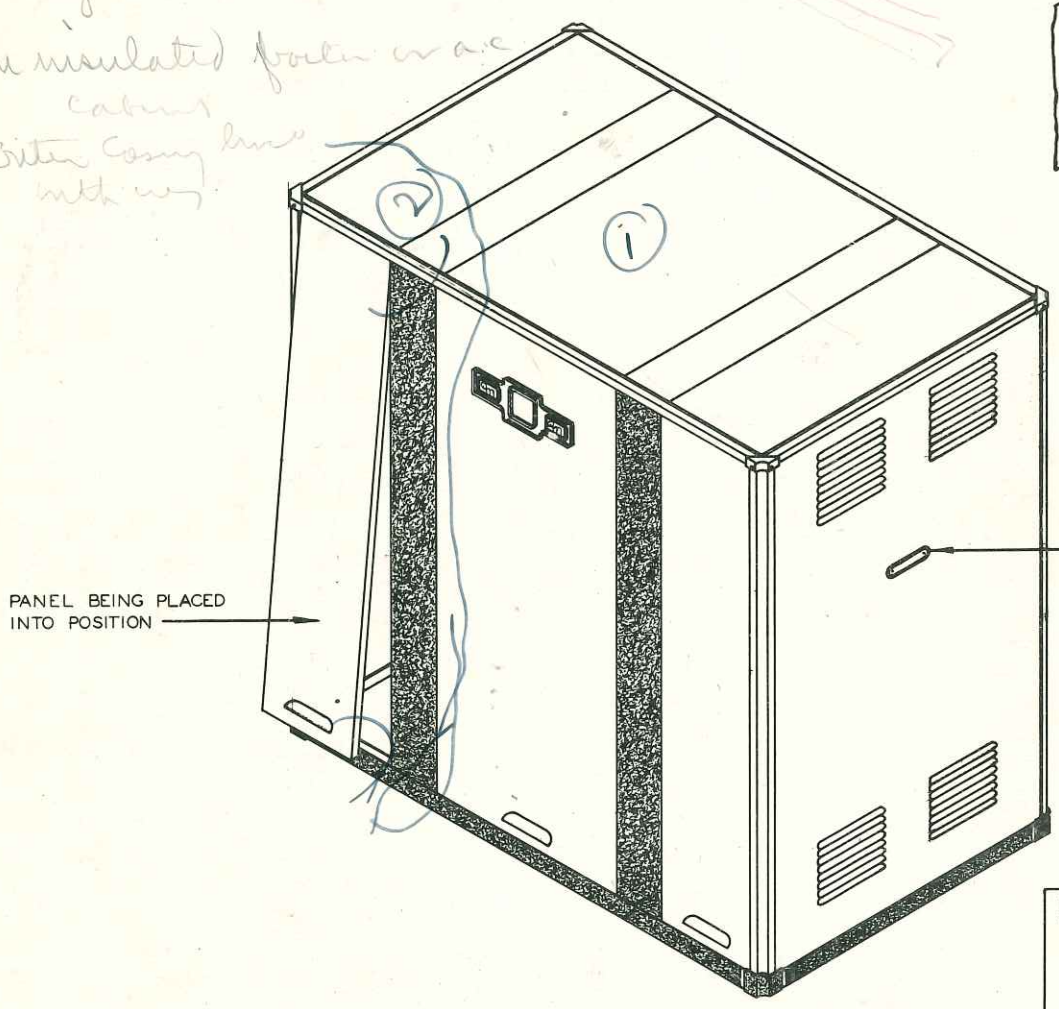


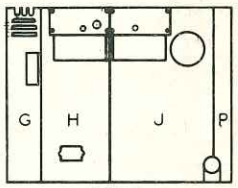
NO. 3

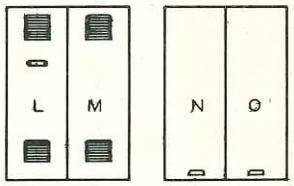


METHOD OF SUPPORTING PRESSURE GAUGE

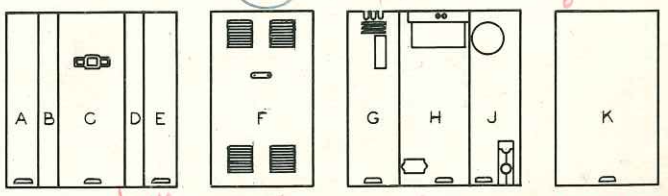
NO. 4







PANELS ABOVE FOR S-1600 W-2880

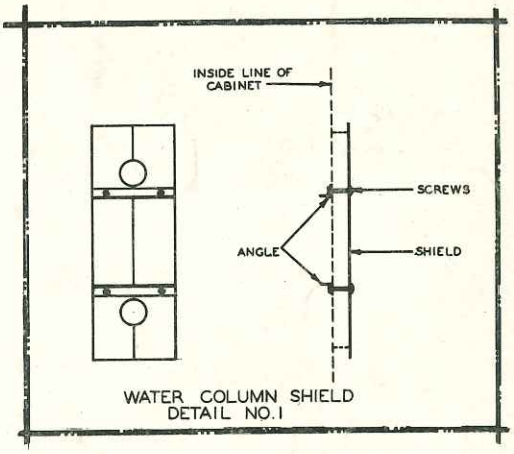


NO. 5

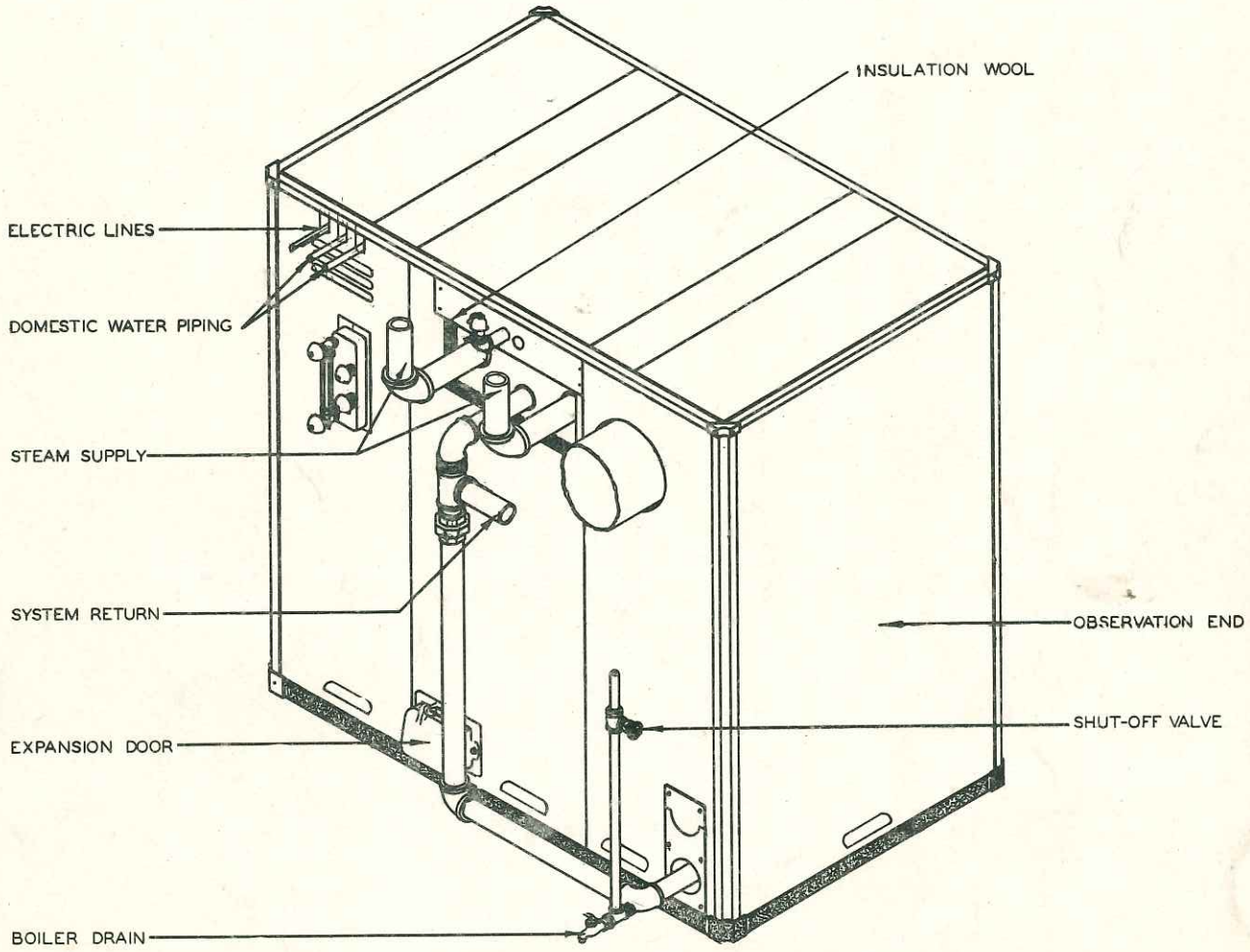
PANEL SIZES

BOILER	S-600 W-960	S-900 W-1440	S-1200 W-1920	S-1800 W-2880
A	12"	12"	12"	18"
B	6"	6"	6"	6"
C	18"	24"	30"	30"
D	6"	6"	6"	6"
E	12"	12"	12"	18"
F	24"	30"	30"	
G	12"	18"	18"	12"
H	24"	24"	30"	24"
J	18"	18"	18"	36"
K	24"	30"	30"	
L				18"
M				18"
N				18"
O				18"
P				6"

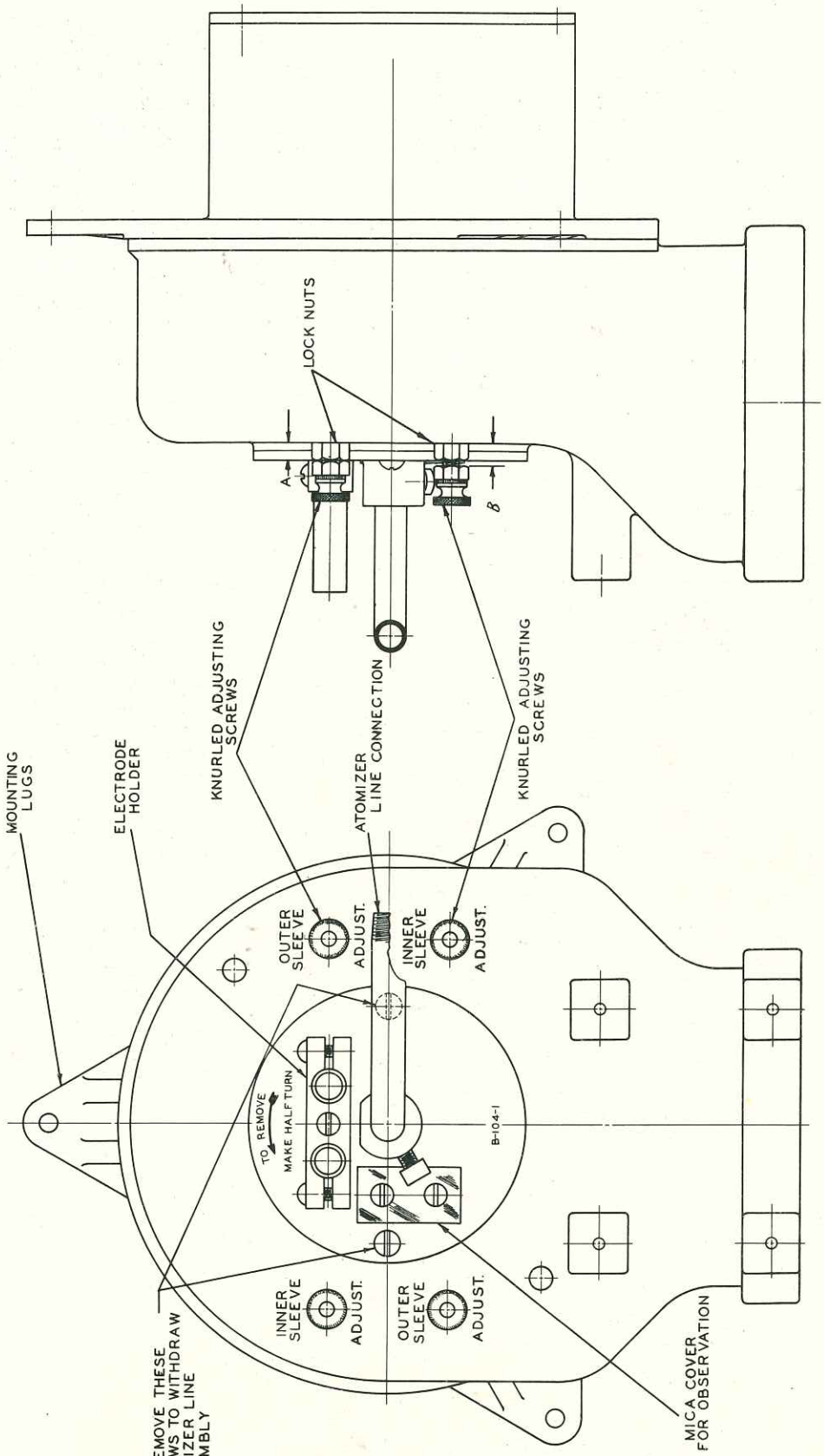
METHOD OF SETTING CABINET
FIG. 9



WATER COLUMN SHIELD
DETAIL NO. 1

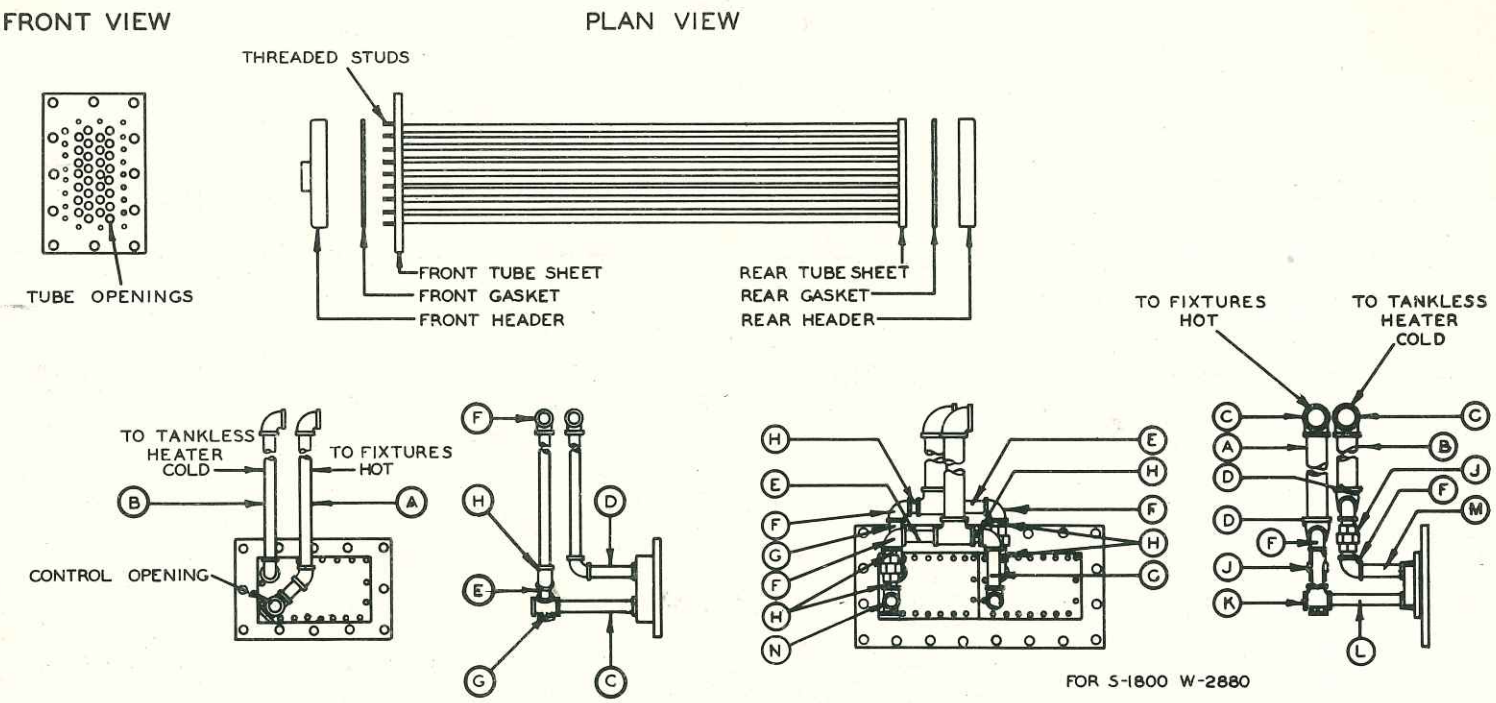


VIEW SHOWING COMPLETED UNIT
FIG.-10



SLEEVE ADJUSTMENTS			
BOILER	ATOMIZER	STD. FACTORY SETTING	
		A	B
S600/W960	W1.5	1"	3/8"
S900/W1440	W1.9	1/4"	3/8"
S1200/W1920	2.3	3/8"	3/8"
S1800/W2880	3.2	1 3/8"	7/16"

FIG. 11



ALL PIPING TO BE $\frac{3}{4}$" BRASS

NO.	AMT.	DESCRIPTION	S-600 W-960	S-900 W-1440	S-1200 W-1920
A	1	NIPPLE	$15\frac{1}{2}$"	$13\frac{3}{4}$"	$13\frac{1}{2}$"
B	1	NIPPLE	$15\frac{1}{8}$"	$13\frac{3}{8}$"	13"
C	1	NIPPLE	$6\frac{5}{8}$"	$6\frac{1}{2}$"	$6\frac{3}{4}$"
D	1	NIPPLE	$4\frac{1}{4}$"	$4\frac{1}{8}$"	$4\frac{3}{8}$"
E	1	NIPPLE	2"	2"	2"
F	3	ELLS - 90°			
G	1	CROSS			
H	1	ELL-45°			

NO.	AMT.	DESCRIPTION	S-1800 W-2880	PIPE SIZE
A	1	NIPPLE	$13\frac{1}{8}$"	$1\frac{1}{4}$"
B	1	NIPPLE	$10\frac{7}{8}$"	$1\frac{1}{4}$"
C	2	ELLS-90°		$1\frac{1}{4}$"
D	2	TEES		$\frac{3}{4}$" x $\frac{3}{4}$" x $1\frac{1}{4}$"
E	2	NIPPLE	$3\frac{3}{4}$"	$\frac{3}{4}$"
F	6	ELLS-90°		$\frac{3}{4}$"
G	2	NIPPLE	4"	$\frac{3}{4}$"
H	6	CLOSE NIPPLE		$\frac{3}{4}$"
J	2	UNIONS		$\frac{3}{4}$"
K	1	TEE		$\frac{3}{4}$"
L	2	NIPPLE	$6\frac{3}{8}$"	$\frac{3}{4}$"
M	2	NIPPLE	4"	$\frac{3}{4}$"
N	1	CROSS		

PIPING & CLEANING INSTRUCTIONS FOR CLEANABLE TYPE TANKLESS HEATER

FIG. 12

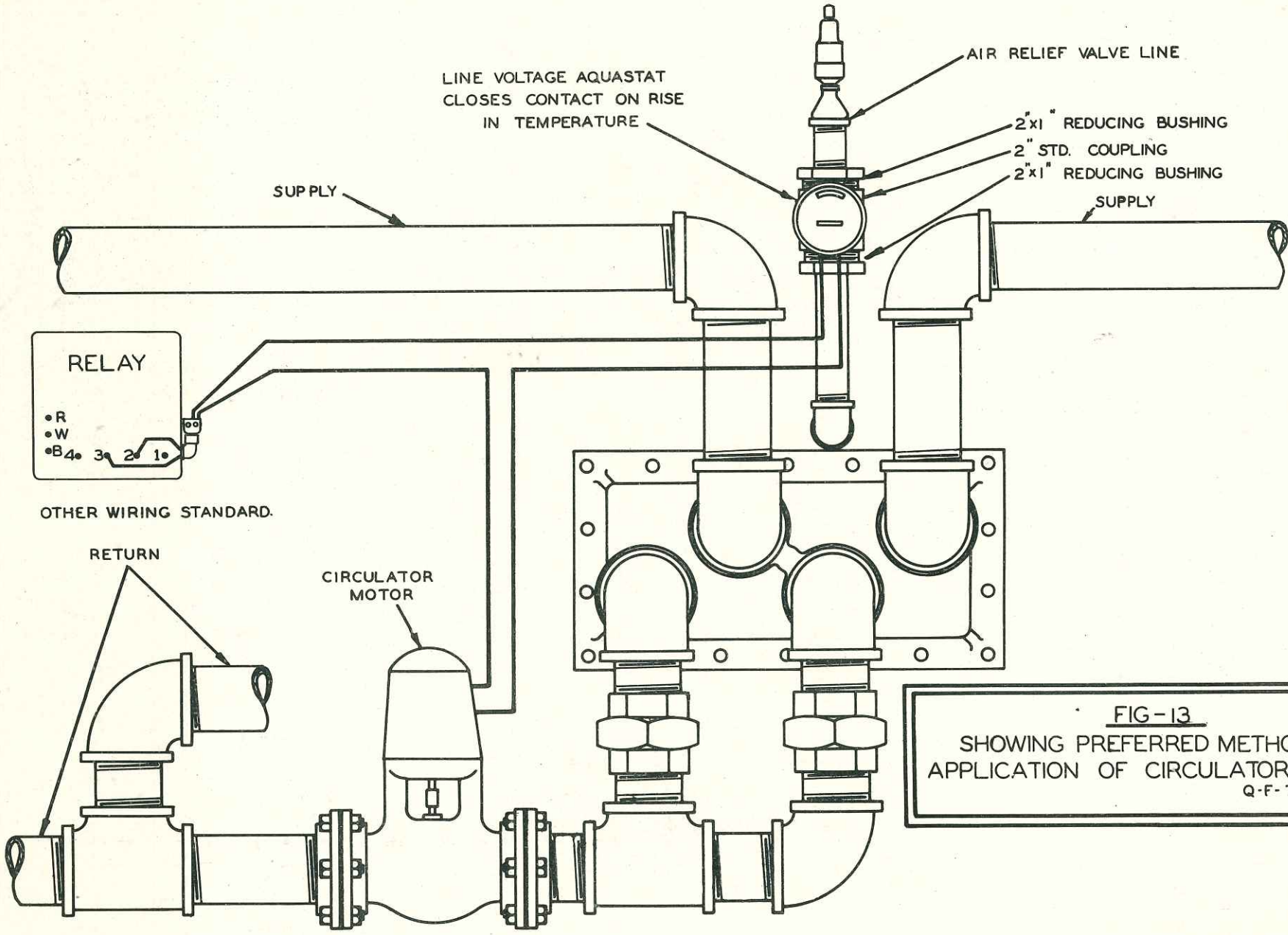
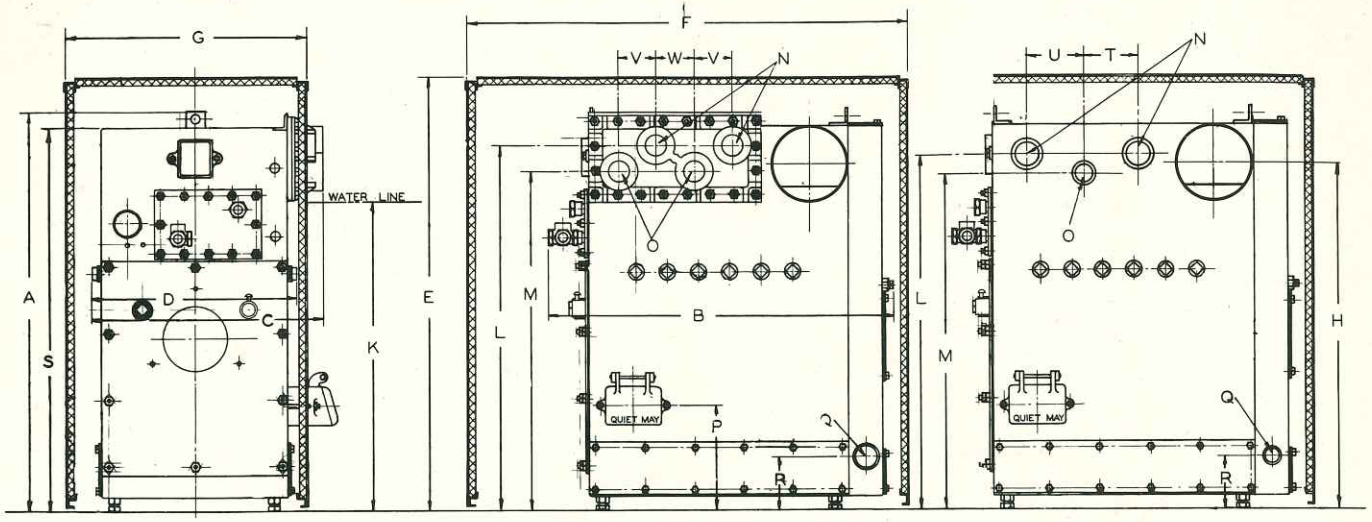
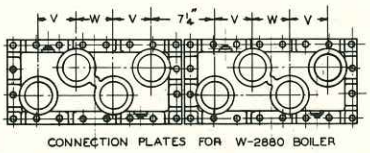
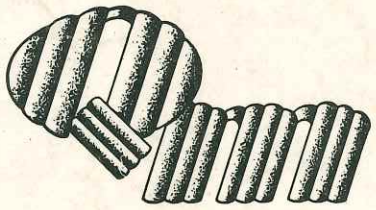


FIG-13
SHOWING PREFERRED METHOD OF APPLICATION OF CIRCULATOR.
Q-F-726

SPECIFICATION SHEET
S.M.T. 4-1





CONNECTION PLATES FOR W-2880 BOILER

			S.M.T. 4-1			
			UNIT NUMBERS			
			S-600 W-960	S-900 W-1440	S-1200 W-1920	S-1800 W-2880
A	OVERALL HEIGHT OF BOILER		46 1/4"	49 1/2"	49 1/2"	54"
B	LENGTH OF BOILER		39"	45 1/2"	51"	64"
C	WIDTH OF BOILER	STEAM	23 3/4"	26 1/2"	28 3/4"	32"
		WATER	27"	29 3/4"	32"	33 1/2"
D	WIDTH OF BOILER ON WATER JOBS (WITH TRANSFER HEATER REMOVED)		23 1/4"	26"	28"	31"
E	HEIGHT OF CABINET		53"	53"	53"	61"
F	LENGTH OF CABINET		57"	63"	69"	81"
G	WIDTH OF CABINET		27"	33"	33"	39"
H	HEIGHT OF FLUE CONNECTION		39 9/16"	42 5/16"	42 5/16"	45 3/4"
J	DIA. OF FLUE CONNECTION		9"	10"	10"	12"
K	HEIGHT OF WATER LINE		35 1/2"	38"	38"	41 1/2"
L	HEIGHT TO ℄ OF SYSTEM OUTLETS	STEAM	40 3/4"	44"	43 3/4"	49"
		WATER	42"	45 1/4"	45 1/4"	49 13/16"
M	HEIGHT TO ℄ OF SYSTEM RETURNS	STEAM	38 1/2"	41 1/2"	42 9/16"	43 1/8"
		WATER	39"	42 1/4"	42 1/4"	48 13/16"
N	NUMBER & SIZE OF SYSTEM OUTLETS	STEAM	2-2 1/2"	2-2 1/2"	2-3"	2-4"
		WATER	2-2 1/2"	2-3"	2-4"	4-3"
O	NUMBER & SIZE OF SYSTEM RETURNS	STEAM	1-2"	1-2"	1-2"	1-3"
		WATER	2-2 1/2"	2-3"	2-4"	4-3"
P	HEIGHT OF EXPANSION DOOR		12"	6 3/4"	11"	11"
Q	SIZE OF BOILER RETURNS	STEAM	1-1 1/2"	1-1 1/2"	1-1 1/2"	1-2 1/2"
		WATER	1-2 1/2"	1-2 1/2"	1-3"	1-4"
R	HEIGHT TO ℄ OF BOILER RETURN	STEAM	5 1/2"	5 1/2"	5 1/2"	6 3/8"
		WATER	6"	6"	6 1/2"	6 3/8"
S	LEVELED HEIGHT OF BOILER		44 1/4"	47 1/2"	47 1/2"	52
T	℄ TO ℄ OF SYSTEM CONNECTIONS	STEAM	6 1/4"	6 7/8"	6 7/8"	13 1/4"
U	℄ TO ℄ OF SYSTEM CONNECTIONS	STEAM	6 1/2"	6 3/8"	6 15/16"	6 3/4"
V	℄ TO ℄ OF SYSTEM CONNECTIONS	WATER	4 3/8"	4 3/8"	4 7/16"	4 3/8"
W	℄ TO ℄ OF SYSTEM CONNECTIONS	WATER	4 1/2"	4 1/2"	4 3/8"	4 1/2"
X	RECOMMENDED HEIGHT OF CHIMNEY		35'-0"	35'-0"	35'-0"	35'-0"
Y	RECOMMENDED AREA OF CHIMNEY		8"x8"	8"x12"	12"x12"	16" X 16"
Z	SHIPPING WEIGHT OF BOILER IN LBS. APPROX.	STEAM	1071	1395	1622	2350
		WATER	1185	1538	1692	2450
AA	SHIPPING WEIGHT OF CABINET IN LBS.		275	327	375	425
BB	SHIPPING WEIGHT OF BURNER IN LBS.		275	275	275	300
CC	SHIPPING WEIGHT OF INSULATION IN LBS		35	50	50	85
DD	GALLONS OF WATER IN BOILER		29.4	46.82	54.99	69 27
EE	GALLONS OF WATER IN THER-MAY-LATOR		1.71	2.58	3.21	4.35
FF	DOMESTIC WATER IN GALLONS PER HOUR - 90° F RISE		180	270	360	540
GG	SQ. FT. ALLOWANCE FOR DOMESTIC WATER LOAD		S-100	S-150	S-200	S-300
	IF TANK HEATER IS USED MAX. COIL RATING 2 HOUR RUN 90° F RISE	S-600 W-960 60 GALS. / S-900 W-1440 90 GALS. / S-1200 W-1920 120 GALS. / S-1800 W-2880	W-165	W-250	W-330	W-500
HH	B.T.U. OUTPUT		144,000	216,000	288,000	432,000
JJ	MAXIMUM OIL RATE - GALLON PER HOUR		1.3	1.9	2.6	3.8
KK	STANDARD ATOMIZER		W 1.5	W 1.9	2.3	3.2